

LEGISLATIVE BRANCH COMPUTER SYSTEM PLAN

A Report to the 54th Legislature from the
Legislative Branch Computer System Planning Council

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Legislative branch computer system plan



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TABLE OF CONTENTS

I.	INTRODUCTION	1
II.	EXECUTIVE SUMMARY	3
III.	ACKNOWLEDGMENTS	7
IV.	LEGISLATIVE BUSINESS FUNCTIONS	9
	A. Research	9
	B. Fiscal Analysis	10
	C. Legislation and Policy	10
	D. Information Distribution	10
	E. Oversight	11
	F. Administration	11
V.	INFORMATION TECHNOLOGY (IT) CONTRIBUTION TO THE LEGISLATURE'S BUSINESS	13
VI.	CURRENT IT ENVIRONMENT	15
	A. Review of Legislative Branch Automation Process	15
	B. Organization	16
	C. IT Equipment	18
	1. Computer Hardware	18
	2. Computer Software	19
	3. Telecommunications	19
	D. IT Accomplishments	20
	1. Information Collection	20
	2. Information Analysis	20
	3. Information Dissemination	22
VII.	IT DIRECTION AND VISION	25
VIII.	FUTURE DIRECTIONS	27
	A. Current System Requirements	27
	B. Expanded (Legislator and Public) Access	28
	C. Summary	29
IX.	IT ACTION PLAN FOR THE LEGISLATIVE BRANCH	31
	A. Continuity of Existing Systems	31
	B. New Opportunities and Options	32
X.	FY1996-97 CENTRAL NETWORK BUDGET PROPOSAL	35
	A. Central Automation Budget Issues	35

APPENDICES

APPENDIX A	
Montana Code Annotated 1993 - Title 5 - Chapter 11 - Part 4	
Computer System Planning	41
APPENDIX B	
1994-95 Biennium Branch IT Accomplishments	47
APPENDIX C	
Branch Standards	51
APPENDIX D	
Detailed Budget Proposal	57
APPENDIX E	
IT Impact on FTE	63

I. INTRODUCTION

A Legislative Branch Computer System Plan is required by Title 5, chapter 11, part 4, Montana Code Annotated. The Legislative Branch Computer System Planning Council (Planning Council) developed a plan in accordance with the requirements of that part. In addition, the Planning Council recognizes that a plan is necessary to direct the substantial investment in technology in a way that will provide the maximum return on the dollar and best address the information needs of the Branch.

In developing the plan, the Planning Council recognized that planning is an active process. Publius Syrus said, "It is a bad plan that admits of no modification." (Maxim 469, Bartlett's Familiar Quotations, Copyright (C) 1937, 1948, 1955, 1965, 1968, 1980 by Little, Brown and Company (Inc.) All Rights Reserved). A computer system plan adopted in the last decade of the 20th century would indeed be a bad plan if it didn't admit of modification nearly every day. The Planning Council thus recognizes the plan as more a process than a product. As such, the plan provides a process for continual evaluation, communication, and review rather than a blueprint for a specific configuration of hardware and software.

Evaluation of existing and potential applications is both technical and managerial in nature. Recognizing this, the Planning Council relied, to a great extent, on the technical staff of the Legislative Branch agencies to review existing systems and recommend technological directions and solutions to problems. The Planning Council reviews and approves the recommendations of the Technical Planning Group (TPG) before Information Technology resources are expended.

This plan represents the collective vision, planning, actions, and achievements of both groups as well as each agency in the Branch.

II. EXECUTIVE SUMMARY

The purpose of the Legislative Branch of Montana State Government is to review and make laws and to appropriate money for the operation of State Government and its services. In order to responsibly operate this process, the Legislature depends on the collection, processing, and distribution of information to and from individual citizens, businesses, and organizations within the state. Information Technology (IT) tools expedite and add both quantity and quality to the information collected by the Branch, to the analysis of that information and to the subsequent distribution of the laws, policies and conclusions of the legislative process.

In the past, Information Technology has been successfully used by the Legislative Branch primarily to allow staff to respond more quickly to requests for information, to produce more complete fiscal and operational analyses, and to speed up and reduce the cost of information processing. Examples of these types of activities include the Bills Processing System, which allows quicker and more accurate processing of new and changed bill text, and the Legislative Budget System, which allows dramatically more fiscal review and analysis in very short time periods than was previously possible. See Appendix E for more detail on the IT impact on staffing levels.

More recently, IT has begun to be used effectively to improve both the collection of information from other government agencies and the dissemination of information to the public. For example: direct access to agency systems by the Legislative Auditor's Office has improved audit quality; E-mail response by agencies to fiscal notes has sped their processing; and direct access by the public to the Bill Status System, the MCA on CD-ROM, and bill text on the State Bulletin Board System (BBS) has allowed popular, quick, and direct access by interested citizens.

In the future, the Planning Council anticipates that substantial time, effort, and money will continue to be focused on the speed, quality, and reliability of the

internal information processing systems that the Legislature relies on to conduct its business. As both technology and the processes of the Legislature change, these systems must be kept up-to-date to ensure their reliability and that they will continue to meet the ever-changing and ever-growing needs for timely, accurate information analysis in the Branch. It is expected, however, that the level of public demand for immediate and direct access to government information will continue to grow and that this demand will consume a greater percentage of information resources than it has in the past. Finally, the public will also request more direct input into the government process through technologies like e-mail and interactive video conferences. These opportunities will need to be evaluated in the future based on their value and cost-effectiveness.

The Planning Council believes that the Branch is prepared to tackle these challenges in IT. An active Planning Council, supported by a well-qualified, professional technical staff, will ensure that both the processes in place and the systems that support them are reviewed and updated and that opportunities to improve public access to government are evaluated, cost-justified, and implemented. The Branch is not only communicating and working together internally, but also with the Executive Branch and other state, local, and national government agencies to ensure coordination and to support government's mutual interests. The Branch plan for automation includes guidelines and established standards that have been designed to support a smooth transition to the future as technology advances.

Technologically, the Branch is supported by a large base of valuable microcomputer technology and a replacement plan that ensures adequate and up-to-date computer hardware in the future. Software is largely standardized and current as well. This allows the Branch to continue to proceed with the update and consolidation of data, software development, and information processes. The continued migration toward centralization of the computer network support and software development staff, servers, budget, and other resources provides the foundation for working with other agencies and the

public to simplify communication processes. In addition, a major challenge to the Branch and the Department of Administration is to upgrade the cable in the Capitol Building to support the current and future information communication needs.

In order to support this information infrastructure, the Planning Council has requested one central information technology budget of \$2,065,035 for the Branch for computer and network needs. Based on the approval of the central budget concept by the Legislature in 1991, the Legislative Council has again included the central budget proposal as part of its budget. Of the total central budget, 67% supports activities under the present law, approximately half in the current budget and half transferred from other Branch agency budgets. New proposals constitute 33% of the request and include proposals to comply with state and national standards, continue consolidation of Branch data and software systems, and implement new functions.

Major projects include the completion of the conversion of the Branch from IBM OS/2 LAN Server to Novell NetWare and to exploring conversion from IDMS, dBase and Rbase to Oracle. When the Legislative Branch selected these products as the Branch standards for Network Operating Systems and data base software, they were state standards. Now that the state standards are Novell NetWare and Oracle, the Legislative Branch has agreed to a conversion process in order to comply with the revised statewide standards. The NetWare conversion is well under way, but the Oracle conversion must be evaluated and planned over the next few years. Both conversions should improve communication and cooperation with other state agencies and offer improvements in the systems within the Branch.

Support for legislator-owned computers has been one of the more difficult issues to address over the past several years. The Planning Council anticipates growing difficulties and opportunities in this area. Successful network administration (serving the Branch) is heavily dependent upon predictable behavior of attached components. Adding legislator equipment of differing

brands with a variety of software having varying release levels vastly complicates the network support arena and ultimately risks the integrity of the entire Branch network. Each component of incompatibility creates the need for new layers of support, cuts productivity, raises training costs, and makes it harder to "re-engineer" work flows to get new kinds of information to more people. For these reasons, the Planning Council recommends against support of privately owned machines on the network. The Planning Council recognizes, however, that integrating legislator use into the system will be a priority in the near future. A considerable planning effort will be required to define the appropriate hardware and software packages needed to provide a useful set of tools for legislators to use. Recognizing this fact, the Legislature adopted HJR 23 in 1991, directing a specific study of the question of legislator use of computers. The study document (Study on Use of Computers by Legislators) can be obtained from the Legislative Council. In short, while cost factors may preclude recommendation for purchase of computers for all members' use in the near term, there is a great need to work toward making data services available to members.

In summary, the Planning Council believes that the Montana Legislature has taken a conservative and prudent but effective approach to IT use in the past. Cooperation and coordination both within the Branch and with other agencies and organizations have ensured both effective and cost-effective decisions. The plans, processes, and visions of the Planning Council, as detailed in this report, should ensure that the current investments and opportunities are successfully utilized to form the basis for more efficient and effective legislative processes.

III. ACKNOWLEDGMENTS

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IV. LEGISLATIVE BUSINESS FUNCTIONS

The Montana Legislature is one of three branches of state government created by the Montana Constitution. The people of Montana express their will directly through the Legislative Branch which enacts laws, levies taxes, and appropriates revenue received from those taxes to various agencies of government for public purposes.

The structure and function of the Montana Legislature are prescribed by constitutional law, statutes, and legislative rules. The Legislative Branch agencies established to support the Montana Legislature and its committees are: the Office of the Legislative Auditor (OLA), the Legislative Council (LC), the Office of the Legislative Fiscal Analyst (LFA), the Environmental Quality Council (EQC), and the Consumer Counsel (CC). The legislative responsibilities include areas such as lawmaking, appropriation, taxation, oversight of the executive, and representation of local interests. The primary function of the Legislature, however, is lawmaking, which consists of the consideration of bills. Other functions of the Legislature that support its primary function include research, fiscal analysis, oversight, policy development, administration, and information distribution. They are described briefly below.

A. RESEARCH

The Legislative Council (Legal Services and Research and Reference Services Divisions) provide non-partisan research services to the Legislature. This staff provides reports and prepares bills for the legislators and committees. They also provide legal research and a reference library for the Branch. The Environmental Quality Council provides research and analysis of specific environmental issues. The Office of the Legislative Auditor is also called upon to research, analyze, and report on certain issues. The Consumer Counsel provides analysis and reports to the Legislature and the Public Service Commission on utility and transportation issues.

B. FISCAL ANALYSIS

The Office of the Legislative Fiscal Analyst provides an independent review of the Governor's budget. It also conducts research and analysis of revenue and expenditure trends and provides reports on the impact of economic changes and on both enacted and proposed legislation. By both performing fiscal analysis and assisting legislators in understanding agency budgets, this function helps the Legislature make responsible decisions about the collection of state revenue and their subsequent investment of and allocation to state government programs. The Consumer Counsel analyzes utility rate issues to protect the interests of the taxpayer.

C. LEGISLATION AND POLICY

Several divisions in the Legislative Council, House and Senate staff, and the Office of the Fiscal Analyst provide staff support to the Legislature as it proposes, debates, and makes decisions on legislation. The Legislative Services Division of the Legislative Council provides clerical support for the bill drafting, introduction, engrossing, enrolling, and codifying of bills. In addition, the Office of the Legislative Fiscal Analyst and the Environmental Quality Council provide staff support to the legislative committees. House and Senate staff provide clerical support to committees, support the flow of bills through the House and Senate, and generally support the operation of House and Senate. The Consumer Counsel develops and advocates policy for utility and transportation taxpayers before the Public Service Commission.

D. INFORMATION DISTRIBUTION

All legislative agencies participate in the distribution of information to the Legislature and the public. For example, Legislative Audit reports are available to the public, as are Budget Analysis, Appropriations, and interim reports. The Bill Distribution Center in the Legislative Council provides distribution service of all legislative proceedings to the Legislature and the public during the

session. This includes bills, amendments, resolutions, status, and journals. The Legislative Information Office provides direct in-person and telephone access to the public on the status of legislative proceedings and the daily calendar of events. The Legislative Services Division provides electronic access to bill status and text. The Legal Services Division and the Legislative Services Division are responsible for preparing and distributing the **Montana Code Annotated**, related rules, journals, annotations, and other documents related to the proceedings of the Legislature.

E. OVERSIGHT

The Office of the Legislative Auditor provides oversight by regularly auditing the functions of state government and gives the Legislature and the public an independent analysis of the effect of laws and rules. These reviews allow the Legislature to analyze whether the executive or other elected officials comply effectively and efficiently with the laws and policies of the Legislature. It also investigates reports and allegations of fraud in state government. The Environmental Quality Council serves as an oversight agency of state government on environmental issues. The Consumer Counsel provides oversight on issues of utility rates. The Office of the Legislative Fiscal Analyst is statutorily charged with oversight responsibility for the appropriations process, revenue, and other fiscal policy issues.

F. ADMINISTRATION

The Management and Business Services Division of the Legislative Council provides purchasing, personnel, and accounting services for the Legislative Council, House and Senate, and, on occasion, for the other Legislative agencies. This helps to efficiently expedite daily business issues and needs for the Branch.

Additional information on the legislative process can be found in "A Legislator's Handbook, 1995, Eighth Edition" by the Montana Legislative Council. In

addition, the publication provides background on the relationship of the process to constituents, the media, other government agencies, and lobbyists.

V. IT CONTRIBUTION TO THE LEGISLATURE'S BUSINESS

In order to carry out these responsibilities, the Legislative Branch depends on information. The Planning Council has noted observations of Matthew Hogan, Director of the California Legislature's Assembly Office of Information Services. These observations can be found in the January/February 1989 issue of Government Technology:

Our product here at the legislature is a piece of paper called legislation. What goes into producing that product is analysis, which is in turn based on information. Making that analysis of higher quality, more timely, and delivered on the spot -- that's our competitive goal. It's a goal computer technology is helping us achieve.

The State of Montana, through its Information Technology Advisory Council (ITAC), has adopted the view that information is critical to the functioning of government. Its view is expressed in the following observation from the "Information Technology Plan for the State of Montana, July 1994":

The people of the State can benefit from information made available both by state agencies and by others, including local government agencies, education, libraries, and other not-for-profit institutions and for-profit organizations. The free flow of information between the government and the public is essential to a democratic society. Correspondingly laws reflect increasing demands that state government be responsible for providing the public and other governmental entities with access to information an agency may possess that illuminates the operation of government itself, society, and the economy--past, present, and future. Open access to information is a means to ensure the accountability of government. . . .

Thus, information forms a basis for the decisions of the Legislature and allows the public to measure the costs and the benefits of legislative decisions.

Technology is the primary tool around which information is collected, moved, analyzed, and disseminated. Therefore, the legislative process is dependent on its technology, and this technology builds both opportunities and problems into the legislative process. It is critical, when deciding how and for what to use technology, to understand how it is incorporated into the legislative process.

VI. CURRENT IT ENVIRONMENT

The next four sections summarize the history of IT development in the Branch, the current organizational and technical environment that supports IT processes and initiatives in the Branch, and the accomplishments that have been made to improve legislative processes. The Planning Council believes this process has put the Branch in a position to move forward to new efficiencies and opportunities.

A. REVIEW OF LEGISLATIVE BRANCH AUTOMATION PROCESS

The Legislature and its agencies have become nearly completely reliant on computer technology to administer the process of the Branch over the past two decades. From 1970 to 1985, most applications were on the state mainframe computer. The Legislative Council, for example, used a proprietary program called Automated Legal Text Entry and Revision (ALTER) to manage code and bill text data. The advent of the personal computer rapidly transformed the scene. Stand-alone dedicated word processors were barely introduced when they were replaced by personal computers with multiple capabilities. Soon, those personal computers were linked to one another in agency networks, and the potential for improvement exceeded the ability of the Branch to keep up.

Recognizing the need for planning, the Senate contracted with a private consultant during the 1987-1989 interim to review the situation and recommend applications. Senate planning led to implementation of a network in the Senate for the 1989 session. The process was mirrored by the House, which implemented a limited system tied closely to the Legislative Council system. The growth of applications in the House and Senate led to recognition by legislators and staff that integration of the systems was important to the future operation of the Legislature. Central planning for the Branch was essential in order to achieve appropriate integration.

Since recognition of the need for planning grew from the increased use of information systems throughout the Legislative Branch, some evaluation of all information systems was required. An informal review of existing systems was conducted by the technical staff serving the respective agencies. This work clearly identified a predominant need to improve and further integrate office automation and information processing functions throughout the Branch.

The primary focus of the application of technology has been on the legislative staff agencies for the purposes of improving cost efficiency and agency abilities to collect, analyze, and disseminate information relevant to public policy. Use of IT has been effective, and specific cases are noted in the IT accomplishments section. Agency IT support will continue to take the majority of the IT resources in the Branch; this support is critical to the daily operation of the Legislature.

In recent years, other agencies and lobbyists have, on a small scale, been included in direct technological access to the legislative staff and process. For example, distribution of the MCA on CD-ROM, direct TV and radio media access to some of the proceedings in the chambers, dial-in public access to bill status, use of the state electronic Bulletin Board System (BBS) for information distribution, and use of the state mainframe and data network to communicate directly with agencies electronically for audits and financial analysis have all expedited the flow of information to and from the Branch.

B. ORGANIZATION

Current information systems have been implemented through the combined effort of the Legislative Branch agencies. They have been incorporated into and are a part of the Legislative Branch Computer System Plan adopted in accordance with 5-11-403, MCA.

The following responsibilities have been established:

Legislative Branch Computer System Planning Council

Mission: to develop and maintain a Legislative Branch Computer System Plan in accordance with 5-11-403, MCA.

Executive Director, Legislative Council

Mission: chair the Legislative Branch Computer System Planning Council and provide technical staff support to the Planning Council.

Technical Planning Group (TPG)

Mission: to assist the Executive Director of the Legislative Council and the Legislative Council staff in providing technical support to the Legislative Branch Computer System Planning Council. Their input assures the Planning Council that goals are achievable, that everyday needs are met, and that all issues are addressed. This group includes IT staff from each legislative agency responsible for services within their own agency.

Through the initiative of the Planning Council, the Branch is just completing the last major IT functional reorganization task. The Legislative Council now (beginning in FY 1996-97) manages the primary IT resources for the Branch. It operates centralized shared servers that provide maximum efficiency in sharing, operating and maintaining software, printers, and shared information access. It provides central support staff, as well as computer hardware, to the agencies in the Branch and works closely with the TPG to identify and prioritize needs and available personnel and budget resources. Finally, through this staff, coordination is provided for information services and relationships with outside organizations such as the general public, lobbyists, and other agencies.

It is also important that the Planning Council has developed reliable ways of coordinating with other agencies and organizations. For example, participation by the Executive Branch (Department of Administration) in the Planning Council and TPG activities ensures constant communication on state system compatibility. The Planning Council recognizes the need to ensure compatibility as a legal requirement, to minimize purchase and support costs, and to facilitate information access. Participation by the Branch in the ITAC and ITMG organizations keeps the Planning Council in touch with the directions of not only Executive agencies, but also Judicial agencies, other elected officials, and, most recently, the University System and selected cities and counties.

The Branch relies on the Department of Administration to provide and operate the data and telecommunication networks within the Branch as well as connecting it to the "outside world". The relationship allows the Branch to focus its limited staff resource on collecting, analyzing, and communicating information rather than the task of maintaining and operating a network infrastructure.

C. IT EQUIPMENT

The technological equipment implemented in the Branch puts it in a good position to tackle the last half of the decade. The paragraphs that follow briefly describe the technology used in the Branch.

1. Computer Hardware

The Branch has determined that most of its internal computing needs can be met cost-effectively using microcomputer hardware. Currently, there are approximately 200 IBM Compatible PCs in the Branch network. The Branch also operates a pool of approximately 25 portable computers.

The Branch will continue to rely on the state mainframe for large statewide systems, like SBAS and PPP, as well as for access to large agency systems.

The mainframe is also currently used for a few agency systems such as the Bill Status System and the MCA codification process.

2. Computer Software

The Branch is well standardized on microcomputer software. These standards are the same standards used by the Executive Branch on major projects. Appendix C contains the Branch software standards.

3. Telecommunications

The token-ring network provided by the Department of Administration (DOA) provides a fast, efficient pathway for data network traffic within the Branch and to the "outside world". The Branch expects to make significant use of the State Bulletin Board System (BBS) for contact with the public through this network as well as the state's mainframe computer. The cable used in the Capitol Building, however, is substandard. This inhibits the expansion of the network to new uses and offers a significant risk to the continued reliable operation of nearly all the Branch's IT activities. The Planning Council supports the Executive's proposal to upgrade this network.

Generally, the Branch is well served by its current telephone technology. Expanded use of voice mail and the use of the telephone to access computer data and recorded messages must be explored, however, as part of a responsible plan to make the legislative process and its information more accessible to the public.

Video technology has not been used extensively by the Branch. While it remains more a long term goal than a short term goal, video technology warrants investigation into how it might improve the legislative process.

D. IT ACCOMPLISHMENTS

Legislative Branch agencies have made numerous technological achievements. Descriptions of several of the major achievements are delineated in the pages that follow. The descriptions also show Branch reliance on IT resources.

1. Information Collection

- Agencies in the Legislative Branch have installed Local Area Networks (LANs), using state and Legislative Branch standards. These networks have been attached to the state data network and can communicate with each other and the state mainframe. Branch staff, working at various agency sites, can attach to the Branch LAN via the state data network. This improves productivity by allowing the transfer of information easily without travel time to and from the office. A number of the achievements listed below could not have been accomplished without these networks.
- Several mainframe programs have been developed and enhanced that help evaluate the state agency financial information maintained on SBAS and PPP.
- Two EDP audit reports on agency use of information resources, as well as a statewide survey on information resources in state government, have been issued.
- The cataloguing system for the Legislative Council Library has been automated, which has improved access to data.

2. Information Analysis

- The Branch has standardized on IBM compatible PCs for information analysis. A few systems currently using mainframe technology are an

exception to this. This microcomputer standard provides the most computer power for the lowest price.

- Use of the analysis tools provided on the PC has resulted in increased productivity and quality of the audits done by the Office of the Legislative Auditor.
- Several improvements have been made to the bill drafting process by applying automation. The bill drafters now use a PC to draft the bill instead of cut-and-paste and writing it by hand. This has resulted in an increase in staff productivity and has allowed data entry staff to work on other projects. A bill conflict check has also been implemented, which indicates when multiple bills are amending the same section of code. A bill drafter can then check to ensure that the amendments do not conflict.
- Several improvements have been made to the appropriation process. Better analysis is being provided through use of the personal computer and its analysis tools, such as Lotus 1-2-3 and Rbase. Also, the time necessary to engross the general appropriation bill has been reduced from 3 or 4 days to 1 or 2 days.
- Significant enhancements have been made to the Legislative Budget System (LBS) used by staff during the budget analysis cycle. Enhancements include timesaving refinements made possible, in part, by the newer release of Lotus 1-2-3 and by improvements to system functions.
- Using the mainframe and Lotus 1-2-3, an expenditure profile system was developed that can provide both historical and current data at the first, second, or third level of expenditure and/or by accounting entity or fund.

- The revenue estimating system continues to be refined. The impact of a single factor changed by the Revenue Oversight Committee can be reflected throughout the revenue estimate with minimal analyst effort, allowing time for more focus on the analysis rather than on the procedural aspect.

3. Information Dissemination

- Both the House and Senate voting systems have been upgraded to allow the software to run on a standard IBM compatible PC. This has made it easier for staff to support the system because they already have PC expertise. Since both voting system PCs are attached to the Legislative Branch network, it is easy to transfer the votes to the journal, which is also on a PC on the network. Both the House and Senate vote systems also use the network to print votes as they are taken on the network printers in the House and Senate main offices.
- A Bill Status/Bill Tracking system has been implemented and is continually being enhanced. This system helps the House/Senate leadership and staff manage the flow of bills through the Legislature so that bill deadlines can be met. It also provides the public with a means of tracking legislative activities on legislation.
- The entire MCA camera-ready process is now done in-house using a PC-based system and laser printers. This has resulted in significant savings in cost and no additional FTEs. The full text of the MCA is stored on CD-ROM. This electronic storage version provides an alternative to publishing the MCA in hardbound version. Purchasers of the MCA CD-ROM can use parts of the MCA in briefs, memos, reports, etc., without having to re-key. In addition, the MCA CD-ROM provides a means of searching the MCA text for specific words or phrases.

- Preparation of the daily journal is now done on PCs at the rostrum. The old method required the rostrum journal staff to prepare the journal in written form for input by data entry staff. The new method has resulted in more timely preparation of the journal and a reduction in staff time needed to produce the journal.
- Several improvements have been made to the amendments process. The amendments are now printed centrally in the amendment coordinators' offices. Special forms, and the costs associated with printing them, are no longer required. The general format of the amendment is maintained on the PC word processor. Amendments can be prepared by a bill drafter, reviewed by an editor, and sent to the amendment coordinators through the existing computer network. This has resulted in amendments being more accurate and more timely.

All amendments must go through the amendment coordinators and are stored on the network. This stored copy of the amendment is used to display the text of amendments on the House and Senate display boards during second reading. The text of amendments is also used by the engrossing staff when engrossing bills. This prevents having to re-key long amendments.

VII. IT DIRECTION AND VISION

The Planning Council has a vision for the Legislature's use of Information Technology, which consists of two parts:

1. To provide for the efficient, timely, and effective operation of the business of the Legislative Branch in order to support its various functions.
2. IT should be explored to help minimize impediments to the collection and dissemination of information related to public policy to all interested parties.

In both cases, technology should allow the complete analysis of the information and its easy application to policy decisions.

The second part of this vision is consistent with the ITAC's vision for Montana, mentioned in the "Information Technology Plan for the State of Montana, July 1994", when it recommends:

. . .the State of Montana adopt a vision . . . that would guide information technology planning and development to take advantage of current and future service delivery and/or access technologies for citizens in their homes, businesses, schools, libraries, and organizations.

In continuing to expand and change the existing IT environment to meet both of these goals, the Planning Council is seeking an integrated information system that supports the information needs of the Montana Legislature. This support also includes individual legislators, leadership, and staff, state and local government officials, and the general public and provides them with data from all of the legislative agencies. The integrated information system should build on the strengths of traditional systems and move the Legislature forward to new and expanded technologies and services.

As the system is developed, legislative agencies foresee constant additions to the ready availability of reports and data maintained for on-line download in their native document format. They envision a migration toward a single graphic system interface that will present appropriate information and services to the different groups of constituents.

Ultimately, there will be one common system look and feel for all system users for text, video, graphics, etc. Users will be able to sign on to the system and work their way through a series of choices or go directly to a predetermined choice quickly and easily.

VIII. FUTURE DIRECTIONS

A. CURRENT SYSTEM REQUIREMENTS

The Planning Council believes that the most significant requirement to be met before undertaking any new information technology opportunity is to ensure that the current information systems supporting legislative processes and staff continue to be supported, improved, and updated. Without this foundation, new ways of improving the processes and access to new groups of constituents and organizations will not be possible. This is both a short-range process and a visionary process since each step must be taken with the ultimate goals of the Branch in mind. At this time, this process primarily consists of:

- (1) finishing the network, hardware and organizational initiatives that have been started;
- (2) improving and simplifying data and software systems in the Branch; and
- (3) improving the reliability of the systems so that all components (network, hardware, software, procedures, and staff) are as reliable as they need to be.

Improved reliability is critical to expanding the use of and dependence on these systems. To quote from "Legislative Branch Computer Network Funding Issues, Background On Legislative Branch Computer Use" prepared by Robert B. Person, January 30, 1993:

Failure of equipment on an integrated computer system will always result in some sort of inconvenience and cost. Depending on what component fails and what plans have been made to cope with the failure, the costs can be extensive. The legislature, for example, relies upon the availability of powerful file servers . . . to enable important systems such as voting systems and budget systems to operate. The failure of the machine used by the Office of the Fiscal Analyst to

compile appropriations committee recommendations for engrossing into the general appropriations bill could delay a regular session second reading schedule by two days or more. Failure of a machine supporting the House or Senate voting system would not only make electronic voting impossible, but would disable all of the other operations of the body at the same time. No guarantee can ever be made that no failure will ever occur. In fact, the opposite is the case. The question is how much is it worth to reduce the risk of failure to a minimum and to be able to react to a failure that may occur. Keeping stable equipment well maintained is part of the strategy to reduce the risk of failure... New technologies to limit the amount of time that would be lost to practically nothing are now available... The cost of system reliability needs to be assessed against the potential cost associated with the risk of failure. Cost cannot be avoided by ignoring its potential.

B. EXPANDED (LEGISLATOR AND PUBLIC) ACCESS

Why should the Branch consider strategic opportunities for legislators and the public, as well as greatly expanded agency, media, and lobbyist information access, when it hasn't before? Several things have happened to both encourage and mandate the Branch to pursue new IT opportunities.

1. New and low-cost technology tools in communications (national information superhighway, interactive video, etc.) have provided opportunities for more timely, knowledgeable debate.
2. Implementation and experience with basic analysis tools (microcomputers, software, etc.) have given both government staff and the public the reasons and capabilities to implement new ways of working.
3. Implementation of a single central computer network in Montana government and migration toward a single central information

processing system and staff in the Legislative Branch will result in a simplified information system and a single, cost-effective way to exchange most information.

4. State laws encourage communicating with the public electronically. Section 2-17-322(2), MCA, states "The purpose of the centralized electronic bulletin board system is to encourage the practice of providing for direct citizen access to state computerized information."

C. SUMMARY

Any new opportunities must be accomplished within the resource constraints of government. It should be noted, from points 2 and 3, that simplification and standardization (and thus resource conservation) are happening primarily as a result of Branch-wide teamwork. The single most important method in dealing with the challenge "to do more with less" is to simplify (standardize). In order for the same staff to accomplish more for more people, staff must be able to maintain what it has developed with less effort. This has been the major driving factor behind the successful standardization in and centralization of the state data network in the Department of Administration and the standardization of IT resources and the migration toward centralization of IT support within the Branch in the Legislative Council. Indeed, it is easy to argue that without these reorganizations, the opportunity to consider reaching out to improve government would be cost-prohibitive. Branch resources, which today are completely consumed with the complexity of making the Branch systems work, would need dramatic expansion to deal with the more complex technical problem of communication with other agencies and the public. It should also be noted that there is room for continued progress in simplification and standardization of computer technology within the Legislative Branch, within state government, and with other levels of government.

While staff automation planning and staff support of current systems have been the immediate priority, the Planning Council recognizes that other uses of technology exist and will become more significant in the immediate future. Matthew Hogan also stated in the article referenced on page 8:

Our new computing platform has empowered us to make great gains using what I would call "adjunct" tools - software which automates common office functions. But I believe the future lies in not-yet-developed strategic software tools which specifically address the information needs of legislators. For instance, databases of demographic, economic and geographic information can help us improve the quality of legislative analysis.

Montana State Government management showed a recognition of the new opportunities that exist for public access to government. The ITAC has adopted a resolution that "The state should adopt an aggressive policy regarding the use of technology to provide access to services and current and retrospective information with appropriate regard for budgetary considerations."

The Planning Council believes the planning process under way in Montana supports appropriate development of computing tools for legislators and for the Legislative Branch now and in the future. The long-range plans of the Branch include resources to identify, evaluate, and provide "pilot" implementations of new technology that deliver better and more timely information directly to the public and to legislators.

IX. IT ACTION PLAN FOR THE LEGISLATIVE BRANCH

There are several important tenets to any successful plan. First, it must seek to move toward a long-term vision. That IT vision for the Legislature has been identified above. Second, it must consist of relatively long-range goals or milestones as listed in Future Directions (above). Third, it must accomplish short-range tasks to move the organization toward its long-range goals and, ultimately, its vision. Finally, the plan must provide a continual process of reviewing the findings of the short-term tasks in light of changes in the needs and opportunities of the organization. This process is provided for by the charters of the Planning Council and the TPG as well as the legislative review of this plan. The short-term tasks that have been identified and approved by the Council and the TPG are listed below.

SHORT TERM (BIENNIAL PLAN)

The following is a brief description of the tasks identified for the 1996-97 biennium and their benefits. Additional information can be obtained from the Legislative Council IT staff.

A. TO PRESERVE, OPERATE, AND CREATE EFFICIENCIES IN CURRENT IT OPERATIONS

- Finish the consolidation of the agency servers onto one central Novell NetWare 4.X system. This will increase staff efficiencies and allow the development of dependable backup systems.
- Complete the centralization of support staff and ensure the development of their capabilities to properly implement the technology and to understand and meet the needs of all Branch agencies.

- Continue with the current replacement cycle to ensure the timely updates to hardware and software so that processes do not inappropriately suffer from "aging".
- Build solid and dependable hardware, software, and procedures to allow the uninterrupted functioning of the IT systems that the legislative process depends on.
- Work with and support the DOA in upgrading the Capitol wiring to ensure the continued operation of the network and to preserve the option of taking advantage of future IT opportunities.
- Continue to consolidate and simplify existing systems to increase efficiencies and be better positioned to support public access to them.

B. TO IDENTIFY AND EVALUATE NEW OPPORTUNITIES TO IMPROVE THE LEGISLATIVE PROCESS

- Convert to Windows in order to provide staff efficiencies and improved information access and to begin building an information interface consistent with public expectations for access.
- Implement a prototype (state standard) Oracle database system to evaluate its utility and the costs associated with providing a single database information system in the Branch.
- Identify and pursue opportunities to use interactive video to replace and enhance travel and telephone communications for legislators and Branch staff. Video offers perhaps the greatest potential for improving communication with the public because it is the most similar IT solution to the traditional face-to-face discussion. Video also offers the greatest challenges due to high computer processing and communications bandwidth requirements.

- Work with private media firms to facilitate use of television and other technology to access the legislative process.
- Identify and test (with DOA) opportunities to use the Internet to provide access to government information and to collect information important to Montana's legislative process. Closely follow the development, use, and public expectations for the information superhighway in Montana and nationally.
- Use the Bill Status System and the State BBS to expand access to legislative information to the maximum extent possible.
- Identify and debate opportunities for new ways of direct public input into the legislative process.
- Continue to work toward bringing full access to the Branch information systems to each legislator both at the Capitol during legislative sessions and in their homes during the interim.

By accomplishing these tasks, the Branch will make major headway in making current IT processes more dependable and efficient. The Branch will also make important contributions to the legislative process by increasing public access to, and participation in, government.

X. FY1996-97 CENTRAL NETWORK BUDGET PROPOSAL

In order to implement any action plan the necessary IT resources must be clearly identified. This budget proposal identifies the equipment, staffing levels, and staff expertise necessary to achieve the Branch goals outlined in the plan. The IT resources necessary to manage a centralized Legislative Branch system and support staff are analyzed. These costs are summarized below and the supporting detail has been provided in Appendix D.

It should be noted that individual legislative agency budgets include existing IT costs for items such as MCA, mainframe, telephone, and existing IT FTEs. The Consumer Counsel is not included in this Central Network Budget Proposal.

A. CENTRAL AUTOMATION BUDGET ISSUES - (\$2,065,035)

There are ongoing expenses that are necessary to maintain an adequate central automation environment. The main issues associated with these expenses are as follows:

1. Operational supplies - 1 %
 - Backup tapes, tape drive cleaners, and other supplies to maintain the Branch file servers.
2. Maintain currency of existing hardware/software - 30 %
 - The Legislative Branch has established a 5-year life span for PCs. In the planning, purchasing, and budgeting process, the Legislative Branch will replace PCs and PC equipment after 5 years of use. With a 5-year life cycle, 20% of the PCs in the Legislative Branch will need to be replaced every year.
 - The Legislative Branch has established a replacement cycle of four years for network file servers. Due to the increased usage

and wear and tear on file servers, they have a shorter life cycle than the PC used as a workstation.

- The Legislative Branch has established an average replacement cycle of 4 years for printers. Printers are largely mechanical devices and thus are subject to breakdown after long usage. They also become technically superseded by newer printers after about 4 years.
- Software also has a life cycle. However, it usually is shorter than the hardware life cycle and full replacement is not always necessary. As the software vendors make improvements to their products either to remain competitive or to fix bugs, they offer these improvements as upgrades or new releases of the product. The cost to upgrade to the new software varies, but is typically less than the original purchase price. Most software vendors do not require that users upgrade immediately. However, over time (usually from 1 to 3 years), vendors will drop support for the older releases of their software. To avoid loss of vendor support, upgrading then becomes mandatory.

In addition, it is easier to exchange documents with other state agencies if both agencies are on the same release of the software. In some cases, state standards require certain releases, e.g. a specific release of Lotus 1-2-3 was required so that agencies could use the Executive Budget Development System.

3. Maintaining and improving system reliability - 7 %

- This portion of the budget requests funds for hardware maintenance as well as fault-tolerant and backup requirements so that the system can be available for use as much of the time as is economically feasible.

4. Staff support and training - 35 %

- This requirement includes new support staff for the central environment to consolidate all IT staff in the Legislative Council. This request includes three transferred FTE and the equivalent of two new contracted positions. Lack of support staff results in unreliable and poorly functioning systems, as well as wasted time by the very staff IT was designed to support. Please refer to Appendix E for a discussion of IT impact on FTE counts.
- There is an ever-increasing demand for technical, user, and application support for the network. In FY 1992 one FTE was added to the Legislative Council for network technical support of the Branch LAN. Since then more workstations and functionality have been added to the network. Requests for support in all areas exceed what existing staff can provide. There is a constant backlog of projects and demand for new services.
- These demands are expected to continue and intensify as new legislator and public access services become available.
- Technical education is necessary for staff to meet the requirements of properly supporting the Branch employees and the Legislature. Lack of proper staff expertise results in wasted time in other FTE positions as well as poorly functioning systems. This seriously diminishes the return on investment in IT.

5. Communication costs - 12 %

- This is the total Branch cost for all data network communications provided by DOA (does not include voice communications). It includes the local cost of connecting computers within the Branch to each other, as well as the cost of communications to

other state agencies, the state mainframe, the public (through bill status and the BBS), the Internet, E-mail, and others.

6. New hardware and software systems - 15 %

- To continue to improve the IT services within the Branch computer access must be expanded to new functions and locations.
- In order to maintain software in the changing world of state and industry standards, significant upgrades must be made. Novell NetWare, Windows, and Oracle are the three major software changes that need to be made to "keep pace" with current expectations in State Government and the industry. More importantly, these standards position the Branch to provide the important and comprehensive data access discussed in the IT vision section.
- Windows - Windows is the predominant operating system software which takes advantage of the newer computer chip technology. Many newer software applications require Windows. Most of the PCs in the Legislative Branch do not have the capacity to effectively run Windows. As the replacement cycle continues, a larger percentage of the PCs in the Branch will have the needed capacity.
- Novell NetWare - The Branch has begun its conversion to implement the state standard Novell NetWare network operating system. This will not only bring staff support, network, and purchasing efficiencies to the Branch in the future but will greatly facilitate cost-effective communication with the rest of state government. The Branch is a leader in conversion to Novell Netware 4.X and encourages all agencies in State Government

to work together to use this data network to enhance their communications.

- Oracle - Oracle is the new state database software standard. Moving aggressively to test and pilot its implementation in the Branch is important for three reasons. First, the internal database systems in the Branch are fragmented, requiring excessive support and providing less utility than is now possible with a new integrated system. Second, some of the systems are aging; and third, a single integrated database system is a requirement to make data access to the public simple enough to be both cost-effective and useful. This budget request allows the Branch to pilot a few systems so that costs and benefits of a full implementation in future bienniums can be accurately assessed.

APPENDIX A

**Montana Code Annotated 1993, Title 5, chapter 11, part 4, Computer
System Planning**

5-11-401. Purpose.

It is the purpose of this part to establish a mechanism for computer system planning encompassing broad policy needs, long-term direction for computer use, and the effective implementation of a detailed plan for the Legislative Branch. It is the purpose of the plan to assure coordination of information system decisions so that the overall effectiveness of the Senate, the House of Representatives, and legislative agencies may be improved. It is the further purpose of the plan to enhance the coordination of Legislative Branch systems with Executive Branch systems wherever possible.

5-11-402. Legislative branch computer system planning council. There is a Legislative Branch Computer System Planning Council composed of:

- the Secretary of the Senate or another representative of the Senate designated by the President.
- the Chief Clerk of the House of Representatives or another representative of the House designated by the Speaker.
- the Sergeants-At-Arms in the two Houses or another representative of each House designated by the Chairman of the Legislative Administration Committee of that House.
- the Executive Director of the Legislative Council, who shall chair the Planning Council.
- the Legislative Auditor.
- the Legislative Fiscal Analyst.
- the Executive Director of the Environmental Quality Council.
- the Consumer Counsel.
- a person designated by the Director of the Department of Administration to represent the data processing policy and planning functions of the Department, who shall serve as a nonvoting member of the Planning Council.

5-11-403. Duties of Legislative Branch Computer System Planning Council.

The Legislative Branch Computer System Planning Council shall develop and maintain a Legislative Branch Computer System Plan. In developing and maintaining this plan, the Planning Council shall:

- (a) continuously review or have reviewed existing information systems that are candidates for automation or enhancement, as well as review existing automated systems that may be improved or integrated with new applications.
- (b) develop and maintain a description of functions or services in the legislative branch and its agencies that would, through application or improvement of computer technology, provide better service to members of the legislature, legislative agencies, and the public.
- (c) develop and maintain a ranking of needs, taking into consideration the relative effectiveness and probable cost of alternative systems.
- (d) develop and maintain recommended system standards for the legislative branch and standard or custom software and hardware solutions appropriate to the needs and environment of the legislative branch and its agencies.

To the extent possible:

- (a) future applications should be explicitly identified in the plan.
- (b) current applications should allow a high degree of flexibility so that future applications are not limited.
- (c) both current and future applications should be coordinated and compatible with the standards and goals of the Executive Branch established under 2-17-501 through 2-17-503, as well as the Legislative Branch standards developed in accordance with the requirement in subsection (d).

5-11-404. Technical support.

The Executive Director of the Legislative Council shall provide technical staff support to the Legislative Branch Computer System Planning Council. In performing this duty, the Legislative Council staff shall assist the Planning Council by developing or having developed analyses of existing and alternate

systems; providing technical solutions and advice related to the standards set by the Planning Council; assisting in assessing benefits and costs of optional solutions; apprising the Planning Council of developments and directions in the industry; maintaining a liaison with and informing the Planning Council of plans and directions within the Executive Branch; assisting in the selection and purchasing of supplies and equipment; and providing other assistance as may be requested. The Executive Director shall encourage participation of appropriate personnel of the Senate, the House of Representatives, and other legislative agencies in the provision of technical support.

5-11-405. Legislative Branch Computer System Plan -- Adoption. The Legislative Branch Computer System Plan must be approved and adopted jointly by the legislative administration committees of the Senate and the House of Representatives.

5-11-406. Legislative Branch Systems -- Conformity to Standards. Computer hardware and software systems installed by the Senate, the House of Representatives, and Legislative Branch agencies must conform to standards established in the Legislative branch Computer System Plan in effect at the time the purchasing decision is made.

APPENDIX B

1994-95 Biennium Branch IT Accomplishments

The projects and tasks below have been accomplished in the 1994-95 biennium. Some of these tasks are the result of initiatives taken 4-5 years ago or more. Others were started more recently, but all have taken significant effort and achieved significant milestones in the 1994-95 biennium. The tasks include all agencies except the Consumer Counsel.

1994-95 IT Achievements

- As discussed in the last Branch Plan, Legislative Branch agencies have begun the process of converting the Branch network to Netware 4.X. Some Branch agencies still remain on OS/2 Lan Server. This conversion will put all legislative agencies on the state standard for network operating systems.
- Updates were made to a primary audit software package to enhance auditor productivity and report preparation. A contract was established with outside consultants to improve the existing mainframe/microcomputer applications. The project improved the usability of the information obtained and increased productivity for office personnel.
- The Bills Process, a mainframe operation from 1973 to 1993, has been converted to run on the PC network using WordPerfect. The print formatting capabilities of WordPerfect have produced a more readable and more flexible bill format than was possible before. Also, it will be easier to hire and train Bill Processing session staff since the job market has people with WordPerfect experience. A third benefit is that public access to the text of bills may be more easily supported (i.e., by placing the text, with only minor conversion, on the State Bulletin Board).
- The text of bills is being made searchable on the Legislative Branch network. Users on the Branch network will be able to search the text

of bills for words or phrases and thus locate bills dealing with specific subject matters.

- Conversion of the Montana Code Annotated Update process from the mainframe to the Legislative Branch network has been partially completed. Once the conversion has been completed, the overall process will be more streamlined and less prone to error.
- The Senate Vote System was upgraded. The Wall Display on the old system had become obsolete. Also, the newer technology allows the vote and agenda systems to be integrated into a single system that requires only one operator.
- An electronic version of all bill status reports (up to now these reports were printed for distribution to the general public) is available for electronic distribution on the state Bulletin Board System plus electronic distribution over the state e-mail system.
- The daily agenda of the House and Senate is on all the same electronic facilities as status reports. Agendas are made available electronically at the same time as they are sent to printing.

APPENDIX C

Branch Standards

The following standards have been adopted for the Legislative Branch. All legislative agencies are required to follow these standards for new purchases or to convert to these standards when it is most cost-effective. These standards are periodically reviewed and updated as Branch needs or state and computer industry standards change.

<u>Application</u>	<u>Standard</u>
Word Processing	WordPerfect
Spread Sheet	Lotus 123
Database	Rbase or dBase depending on the application requirements (with Oracle conversion anticipated)
Desk Top Publishing	Ventura Publisher
Graphics	Harvard Graphics
Operating System	DOS (Windows).
3270 Emulation	Attachmate EXTRA!
E-Mail	ZIP!Mail (ZIP!Office)
Modem hardware	Hayes compatible
Dialup software	Remote 2/Crosstalk
Mainframe/PC link	Panlink
Lan Operating System	Novell NetWare
Computer Hardware	State Term Contract IBM compatibles

All legislative agencies are to maintain the same release level for each software standard. To date agencies are on the same release of all software.

Status of each standard:

1. WordPerfect - Although good, competitive word processors exist, WordPerfect remains a solid state, national, and industry standard. It is supported by more software, known to more current and potential

employees, and used as a document exchange format more often than any other package. It meets the needs of the Branch. WordPerfect 5.1 for DOS and WordPerfect for Windows are likely to remain the Branch standard indefinitely.

2. Lotus - Although Lotus has slid some as an industry standard, the same arguments for WordPerfect apply to Lotus 1-2-3.
3. Rbase and dBase - The utility of these two data base standards to the Branch will be reevaluated. Although Rbase is the state standard, it has not been very successful at unifying state government data and has been replaced for a more powerful system in Oracle. Once the industry standard, dBase is no longer a dominant player and has been replaced by a number of systems, including Oracle. If the Oracle pilot project is successful, Rbase and dBase systems will be phased out and the data base standard will be Oracle. This change will result in new training and conversion costs in the next biennium, but provide a single, simple, cost-effective solution for both staff and the general public to access Branch data.
4. Desktop Publishing and Graphics - No state or national standards exist for desktop publishing. The state has a minimally effective graphics standard called Freelance. Freelance has not met the needs of the Branch in the past. Both Ventura and Harvard Graphics are respected products in the industry and support access to a wide variety of standard data formats, including WordPerfect and Lotus. Because these products meet the current needs of the Branch, they were adopted as the standards instead of Freelance. These standards will continue to be evaluated in light of Oracle and other changes in the industry.
5. Mainframe Access and E-Mail - Attachmate EXTRA! and Zip!Mail are DOA state standards. Although EXTRA could be considered an industry standard for IBM mainframe access, neither is a national standard. Both meet the needs of the Branch. With conversion to

the Windows environment the Branch will consider Zip!Office, which offers electronic calendar capabilities in addition to E-mail. If DOA provides full Internet mail access from Zip!Mail, future national standards capability requirements should be satisfied as well; otherwise, additional software for Internet access will need to be considered.

6. Modem Hardware - Hayes modems continue to be a reliable, cost-effective solution to dial-up communication needs and are a state, national, and industry standard.
7. Mainframe Link and Modem Software - Although Panlink and Crosstalk continue to operate well for the Branch and are state standards, neither is aggressively supported by DOA nor is either an industry or national standard. These will continue to be used until new products offering better support or greater functionality are identified.
8. PC Operating Systems - DOS is still the state, national, and industry standard and meets the current needs of the Branch. DOS/Windows, however, offers improved access to information. DOS/Windows offers a single simple interface to computer data to the public and appears to be replacing DOS as a state, national, and industry standard. It is expected to become the Branch standard over the next few years.
9. LAN Operating System - Novell is the state, national, and industry standard. The arguments applied to Word Perfect apply to Novell as the Branch standard.

APPENDIX D

LEGISLATIVE BRANCH CENTRAL NETWORK BUDGET FOR FY 96 - 97

ITEM	UNIT Fac-		96		97		Branch Agency's		96		SENATE		96		HOUSE		ALL AGENCY	
	COST	tot	QTY		QTY		TOTAL	QTY	TOTAL	QTY		TOTAL	QTY		TOTAL		TOTAL	
- Training																		
Novel Network training	\$3,000		1	3			\$18,000				\$0				\$0		\$18,000	
User Training	\$85		2	125	130		\$43,350	0	50	\$8,500	0	50	\$0	0	\$0		\$60,350	
PC/SAS Training	\$85		3	2	0		\$510	0	0	\$0	0	0	\$0	0	\$0		\$510	
- Hardware Maintenance																		
File Server Maintenance	\$3,315		1	2			\$13,260				\$0				\$0		\$13,260	
Other Server Maintenance	\$400		1	2			\$7,000				\$0				\$0		\$7,000	
Modulation Maint.	\$430		0.3	106	112		\$28,122	10	30	\$5,160	10	44	\$0	0	\$6,066		\$40,248	
Print Server Maint.	\$890		0.3	24	31		\$11,554	0	0	\$0	0	0	\$0	0	\$0		\$11,554	
Laser Printer Maint.	\$322		0.66	31	39		\$24,116	0	4	\$1,378	0	1	\$345		\$345		\$25,839	
Other Printer Maint.	\$200		0.2	16	16		\$1,280	0	0	\$0	0	0	\$0		\$0		\$1,280	
Portable Maintenance	\$270		0.3	26	26		\$4,212	0	0	\$0	0	0	\$0		\$0		\$4,212	
Records Management Tape Storage	\$20		12	1			\$480				\$0				\$0		\$480	
Equipment Replacement	\$22,000		0.25	2			\$22,000	0	0	\$0	0	0	\$0		\$0		\$22,000	
File Server Replacement	\$11,000		0.25	2			\$13,750	0	0	\$0	0	0	\$0		\$0		\$13,750	
Other Server Replacement	\$3,300		0.2	106	112		\$143,880	10	30	\$26,400	10	44	\$35,640		\$35,640		\$205,920	
Modulation Replacement	\$899		0.2	24	31		\$7,689	0	0	\$0	0	0	\$0		\$0		\$7,689	
Print Server Replacement	\$4,227		0.42	31	39		\$47,242	0	4	\$2,705	0	1	\$676		\$676		\$50,724	
Printer Replacement	\$500		0.16	16	16		\$2,560	0	0	\$0	0	0	\$0		\$0		\$2,560	
Low End Server Replacement	\$1,200		0.25	4			\$3,564	0	0	\$0	0	0	\$0		\$0		\$3,564	
Network UPS Replacement	\$200		0.23	106	112		\$14,388	10	50	\$3,060	10	49	\$3,894		\$3,894		\$22,242	
Misc. Hardware Replacement (Surge protectors, Portable Replacement)	\$4,500		0.2	26	26		\$46,800	0	0	\$0	0	0	\$0		\$0		\$46,800	
- Software Maintenance																		
File Servers	\$50		1	167	264		\$21,550				\$0				\$0		\$21,550	
Misc. File Server Software																		
Workstations																		
DOOS	\$50		1	132	138		\$13,500	10	50	\$3,000	10	49	\$2,950		\$2,950		\$19,450	
WP	\$85		0.8	132	138		\$18,360	10	50	\$4,080	10	49	\$4,012		\$4,012		\$26,452	
LOTUS	\$100		0.3	132	138		\$8,100	10	50	\$1,800	10	48	\$1,770		\$1,770		\$11,670	
Database Server Software (Phase/Phase)	\$1,500		1	1			\$3,000						\$0		\$0		\$3,000	
Misc. (Notion, etc)	\$100		0.2	132	138		\$1,688	10	50	\$375	10	49	\$369		\$369		\$2,431	
							\$5,400	10	50	\$1,200	10	49	\$1,180		\$1,180		\$7,780	
- Network Connect Changes																		
File servers																		
Workstations - Perm.	\$36		12	4	5		\$3,888	0	0	\$0	0	0	\$0		\$0		\$3,888	
Workstations - Session	\$36		12	106	112		\$94,176	10	10	\$8,640	10	38	\$8,640		\$8,640		\$111,456	
Portable Pool	\$36		7	0	13		\$3,276	0	40	\$10,080	0	38	\$8,828		\$8,828		\$23,164	
Print Servers - Perm.	\$36		12	6	12		\$7,776	0	0	\$0	0	0	\$0		\$0		\$7,776	
Print Servers - Session	\$36		12	24	24		\$20,736	0	0	\$0	0	0	\$0		\$0		\$20,736	
Add/Move/Change - Perm	\$36		7	0	7		\$1,764	0	0	\$0	0	0	\$0		\$0		\$1,764	
Add/Move/Change - Perm	\$125		0.1	106	112		\$2,725	0	0	\$0	0	0	\$0		\$0		\$2,725	
Hot locks - Perm	\$125		0.3	0	0		\$0	10	50	\$2,250	10	48	\$2,213		\$2,213		\$4,463	
Hot locks - Session	\$23		5	0	47		\$51,612	0	0	\$0	0	0	\$0		\$0		\$51,612	
							\$1,495	0	40	\$4,600	0	38	\$4,485		\$4,485		\$10,500	
- Supplies																		
Backup tapes	\$14		0.3	360	360		\$3,024	0	0	\$0	0	0	\$0		\$0		\$3,024	
Tape Drive Cleaners	\$21		1	12	12		\$504				\$0				\$0		\$504	
Printer Cartridges & Ribbons	\$50		1	119	189		\$15,400	40		\$2,000			\$2,000		\$2,000		\$19,400	
Ozone Filters for HP Printer	\$50		1	31	39		\$3,500	0	4	\$200	0	1	\$50		\$50		\$3,750	
Diskettes	\$8		1	88	143		\$1,848				\$0				\$0		\$1,848	
Portable Printer Cartridges	\$25		3	11	11		\$1,650	0	0	\$0	0	0	\$0		\$0		\$1,650	
- Hardware and software																		
File Servers																		
Test Netware 4 X Configuration	\$11,000		1	1	1		\$22,000	0	0	\$0	0	0	\$0		\$0		\$22,000	
Additional Server Disk Space	\$3,690		1	2	4		\$22,140	0	0	\$0	0	0	\$0		\$0		\$22,140	
Upgrade Tape backup units	\$10,000		1	1	1		\$20,000	0	0	\$0	0	0	\$0		\$0		\$20,000	
Fault Tolerance	\$25,000		1	1	0		\$25,000	0	0	\$0	0	0	\$0		\$0		\$25,000	

[illegible]

ITEM	COMMENT
<ul style="list-style-type: none"> - Training <ul style="list-style-type: none"> Novell Netware training User Training PC SAS Training 	<p>Training for the Network Administrators</p> <p>2 Day of training for LC, UFA, OLA, & EOC per biennium. 2 Days of training for Hou. and Sen. for session start-up.</p> <p>3 days of PC SAS training for 2 people</p>
<ul style="list-style-type: none"> -Hardware Maintenance <ul style="list-style-type: none"> File Server Maintenance Other Server Maintenance Workstation Maint. Print Server Maint. Laser Printer Maint. Other Printer Maint. Portable Maintenance Records Management Equipment Replacement File Server Replacement Other Server Replacement Workstation Replacement Print Server Replacement Printer Replacement Low End Printer Replacement Network UPS Replacement Misc Hardware replacement (Surge protectors, Portable Replacement -Software Maintenance <ul style="list-style-type: none"> File Servers Misc. File Server Software Workstations DOOS WP LOTUS Database Server Software (Rbase/Dbase) Harvard Misc. (Notion, etc) -Network Connect Changes <ul style="list-style-type: none"> File servers Workstations - Perm. Workstations - Session Portable Pool Print Servers - Perm. Print Servers - Session Add/Move/Change - Perm Add/Move/Change - Session Hot Jacks - Perm Hot Jacks - Session -Supplies <ul style="list-style-type: none"> Backup tapes Tape Drive Cleaners Printer Cartridges & Ribbons Ozone Filters for HP Printer Disks/ettes Portable Printer Cartridges -Hardware and software <ul style="list-style-type: none"> File Servers Test Netware 4 X configuration Additional Server Disk Space Upgrade Tape backup units Fault Tolerance 	<p>The Unit Cost is for one year. The count includes only the two main servers.</p> <p>The Unit Cost is for one year. The count includes the backup file server, the CD-ROM server, and the Tape Backup Server.</p> <p>The Unit Cost is for one year. The Factor is for 30% of the workstations since some will be on 3 year warranty etc.</p> <p>The Unit Cost is for a \$699 Jet/Direct Card. The Factor is for 30% of the print servers.</p> <p>The Unit Costs is an average of printer maintenance for laser printers. The Branch Count is for Network printers.</p> <p>The Unit Cost is an average of standalone printer maintenance.</p> <p>The Unit Cost is average maintenance amount. The factor is for 33% of the portables.</p> <p>Store backup tapes of file servers off site</p> <p>Replace/Upgrade 25% per year</p> <p>Replace/Upgrade 25% per year</p> <p>Replace 20% of the workstations in each agency each FY. Unit costs includes network card and 17" color monitor.</p> <p>Replace 20% of the Print Servers in each agency each FY. Unit Cost of \$699 is for Jet/Direct card.</p> <p>Replace 16% of the printers in each agency for each FY. (ie. 6 year replacement cycle. Unit Cost is for HP IV SI</p> <p>Replace 16% of the printers in each agency for each FY. (ie. 6 year replacement cycle. Unit Cost is for Low End Printer.</p> <p>Three year replacement cycle. 33% per year.</p> <p>Five year replacement cycle. 33% per year.</p> <p>Five year replacement cycle. 20% per year.</p> <p>Tape Backup software, etc.</p> <p>One upgrade per workstation per biennium.</p> <p>One upgrade per workstation per biennium. Factor indicates concurrent users. Portables have standalone license.</p> <p>One upgrade per existing copy of LOTUS per biennium. Factor indicates concurrent users.</p> <p>One upgrade per existing copy of Rbase per biennium.</p> <p>5% of the workstations.</p> <p>ISD Network Communication Connect charges 36/mo. per connection. Unit Cost is 36/mo. Factor amount is for 12 months.</p> <p>ISD Network Communication Connect charges 36/mo. per connection. Unit Cost is 36/mo. Factor amount is for 12 months.</p> <p>ISD Network Communication Connect charges 36/mo. per connection. Unit Cost is 36/mo. Factor amount is for 12 months.</p> <p>ISD Network Communication Connect charges 36/mo. per connection. Unit Cost is 36/mo. Factor amount is for 12 months.</p> <p>ISD Network Communication Connect charges 36/mo. per connection. Unit Cost is 36/mo. Factor amount is for 12 months.</p> <p>ISD Network Communication Connect charges 36/mo. per connection. Unit Cost is 36/mo. Factor amount is for 12 months.</p> <p>Budget 10% of the nodes in the Permanent agency to accommodate agency moves and session start up for House and Senate.</p> <p>Budget 30% of the nodes in the Session agencies to accommodate agency moves and session start up for House and Senate.</p> <p>This is an amount to keep unused jacks available for H & S during the interim</p> <p>This is an amount to keep unused jacks available for H & S during the interim</p> <p>For backup tape of drives on file servers</p> <p>For backup tape of drives on file servers</p> <p>Replace the filter once for the biennium</p> <p>Testing environment for Netware 4 X. Includes a server, workstations, etc. Whole environment to test Netware 4 X releases before going production</p> <p>Upgrade or replace file server tape backup units</p> <p>Implement Netware SFT III on the two branch file servers.</p>

Workstations

Additional Workstations (incl. software & T-R cartou & Sen are replc. 20% of worksta. already have a core amount, and will get some about to be phased out worksta. so do not need to replace all previously leased worksta.
Additional Peripherals/Notebooks (plus software)
Additional Printers (including T-R Card)
Replace Bill Status Terminals with PCs
State Standards Compliance
Convert Branch to Windows

Workstations

Software
Windows Upgrade
WordPerfect & Lotus Upgrades to Windows/Wordperfect and Lotus upgrade costs are in the base budget and are budgeted for DOS upgrades, if we convert to windows can use that budg. to buy Windows upgrades
Misc. Windows Software (Imagic, etc)
Training

Technical Staff Training

User Staff Training - Windows

Oracle Prototype

Network Server

Development Software - Oracle Forms

Deployment Software - Oracle Forms

Deployment Software - Browser

Software Maintenance - Oracle Forms Dev

Software Maintenance - Oracle Forms Dev

Training - Development Staff

Misc

Remote Access to Network/Modem server

Server Network Connect Charges

FAX/Modem

Library Scanner Upgrade

Hardware

Software

Library CD Reader

Library Internet Connect Charges

- Personnel

FTE - Grade 16

FTE - Grade 15

Personnel Adjustments (Up/Down grades)

FTE - Contracted Services

Training for new FTE

Workstation connect charges/new FTE

Desk Office Space, Supplies, etc

incl planbrpc.wk1

The amounts for House & Senate are to replace previously leased printers
Replace all existing 3270 Bill Status Terminals with PCs
This amount is for investigating any new technology.

The number of workstations needed to bring all workstations up to Windows ready. It takes into account the FY 96-97 Replacement Cycle
There should be 20% worst; replaced in FY 94 \$58.96 for a total of 60% Windows ready. Add 10% in FY 96.97 and should be close enough to all windows ready
Windows will come on all new workstation purchases so only budget for upgrading older version of windows @ 40% of the Workstations
Windows/Wordperfect and Lotus upgrade costs are in the base budget and are budgeted for DOS upgrades, if we convert to windows can use that budg. to buy Windows upgrades

This is general Windows training. One Day of Windows WP and one day of Windows Lotus training are covered under "User Training" in base budget on page one
Oracle Forms is the workstation development software. The amount is to purchase the concurrent user license
This is the version of Oracle Forms for the user to run. It is also a concurrent user license.
Browser Software is used at the workstation for adhoc queries of the Oracle Database
Annual Software Maintenance Fees
Annual Software Maintenance Fees

File Server Software for remote access to the network
Provide Dial Up access to the Network

The unit amount is a grade 16, half way between entry and market, plus 15% benefits.
The unit amount is a grade 15, half way between entry and market, plus 15% benefits.
This is an amount to be allocated to Personnel to be used to upgrade existing staff if necessary to accommodate a new organizational structure

APPENDIX E

FTE impact of Information Technologies

(Excerpt from "Legislative Branch Computer Network Funding Issues, Background on Legislative Branch Computer Use", by Robert B. Person, January 30, 1993.)

Since automating a process allows work to be done much faster, it naturally follows that it should take fewer people to do the work. Authorizing agencies from corporate boards to legislatures thus ask how many people can be replaced if authority to buy machines is granted. This is a perfectly logical question, yet information processing professionals everywhere try to deflect the question when it arises. Why? Let's look at a couple of examples based on the experience of the Montana Legislature.

In 1967, the Legislature hired its first Fiscal Analyst. He had no central accounting system to use, much less an automated one. Much of his first year of employment was spent answering one question - how much money does the state spend on travel? Now, with a standardized statewide budgeting and accounting system residing on the mainframe computer, and sophisticated systems for extracting information, we have an Office of Fiscal Analysis. Clearly, the Fiscal Analyst can now perform more studies in a year than merely compiling the cost of state travel. Has automation played a role in staffing levels?

In 1972, the Legislature installed a program on the mainframe computer that would allow retrieval of statute text, storage of bill text on the computer, alteration of both statute and bill text, and control the printing of bills. Rules adopted in 1973 required bills to be processed by the system prior to introduction, or in a few instances, after introduction but before going to committee. In 1971, the current Senate taxation room was completely filled with engrossing and enrolling typists (approximately 25 to 30) who worked from early in the morning until late at night to type bill text. No error corrections were allowed, so an error anywhere on a page required complete retyping. Upon installation of the computer system, the staff was reduced to 12, including those who originally typed the bills and those who typed the

journals. In 1993, five people support a far larger number of bills and perform a number of additional duties as well. Fewer people do more work with far greater accuracy. The system enabled the legislature to make major changes in bills, yet have them back letter-perfect for consideration the next day. Maintenance of computing machinery and training of the people who use it are essential expenses of today's legislative process.

Dramatic changes in the number of people working in an area can occur in conjunction with increasing automation. Some of those changes may result from increased productivity, while others may result from increased work assignments regardless of productivity. It is generally recognized that automation has allowed vastly increased duties to be accomplished by office workers without a proportional increase in the number of people needed to do the work. That is why staff reductions are seldom a direct consequence of automating office work. It can only be said that each person working will produce more with higher quality in terms of completeness and accuracy than would otherwise be possible.

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